COLUMBIA LIBRARIES OFFSITE
HEALTH SCIENCES STANDARD
HX00035149

Morton

Memo. relating to the discovery of surgical anesthesia

Columbia University
in the City of New York

THE LIBRARIES

Medical Library

Digitized by the Internet Archive
in 2010 with funding from
Open Knowledge Commons

http://www.archive.org/details/memorandarelatin00mort

With the compliments
of William J. Morton M.D.

MEMORANDA RELATING TO THE DISCOVERY OF SURGICAL ANESTHESIA, AND DR. WILLIAM T. G. MORTON'S RELATION TO THIS EVENT.

BY

WILLIAM JAMES MORTON, M.D.

Professor of Diseases of the Mind and Nervous System and Electro-Therapeutics in the New York Post-Graduate Medical School and Hospital.

Rec'd. via Acquisitions

NO LONGER THE PROPERTY OF THE UNION THEOLOGICAL SEMINARY, N. Y.

LIBRARY OF THE UNION THEOLOGICAL SEMINARY, NEW YORK

JUN 18 1906

Reprinted from the POST-GRADUATE for April, 1905.

WILLIAM THOMAS GREEN MORTON, M.D.,
DISCOVERER OF SURGICAL ANESTHESIA.

"By whom pain in surgery was averted and annulled.
Before whom, in all time, surgery was agony.
Since whom science has control of pain."

Inscription on Dr. Morton's monument erected by citizens of Boston, in Mt. Auburn Cemetery, Mass.

By permission of the Century Co

MEMORANDA RELATING TO THE DISCOVERY OF SURGICAL ANESTHESIA, AND DR. WILLIAM T. G. MORTON'S RELATION TO THIS EVENT.

BY

WILLIAM JAMES MORTON, M.D.

Professor of Diseases of the Mind and Nervous System and Electro-Therapeutics in the New York Post-Graduate Medical School and Hospital.

Reprinted from the POST-GRADUATE for April, 1905.

Historical Collection
F 128.11 2
H 24
1896
v. 2

350992

MEMORANDA RELATING TO THE DISCOVERY OF SURGICAL ANESTHESIA, AND DR. WILLIAM T. G. MORTON'S RELATION TO THIS EVENT.

BY WILLIAM JAMES MORTON, M.D., NEW YORK.

I.

At the request of many interested in the subject, an attempt is here made to gather together, without bias and in brief form, a few facts relating to a notable discovery, for no event in the history of medicine in this country stands forth more conspicuously than that of the discovery, in 1846, of the safe use of ether in surgery.[1]

William T. G. Morton, M.D., medical student in the Harvard Medical School, dentist and physician, was born in Charlton, Mass., August 19, 1819, and died, aged 48, in New York City, July 15, 1868.

His early education was received at the Northfield Academy and at the Leicester Academy in. Massachusetts. His father failed in business and the lad set out to make his own way in the world. Alternating, like so many self-made and self-educated New England young men, between the counter and the school room, earning what was demanded for his support, he finally concluded to become a physician. As a first step, in 1840, at the age of 21, he was enrolled as student in the Baltimore College of Dental Surgery. This college was connected with the Washington University of Medicine, which subsequently became the College of Physicians and Surgeons of Baltimore. In 1849 Dr. Morton received the honorary degree

1. See Trials of a Public Benefactor, New York, Pudney & Russell, 1859. See statements supported by evidence on the claim of W. T. G. Morton, presented by Mr. Davis and referred to the select committee, 32d Congress, 2d session, 1853, Washington, 1853. See six congressional Reports referred to later on. See Report of the Trustees of the Massachusetts General Hospital and Dr. Morton's Memoir to the French Academy, both in Littell's *Living Age*, March 18, 1848. See the American Cyclopedia, New York, D. Appleton & Co., 1875. Article, "Morton, W. T. G.," p. 855. See Encyclopedia Britannica, ninth edition. Article, "Anesthesia." See the *Century* Illustrated Monthly Magazine, New York City, August, 1894. See *McClure's Magazine*, September, 1896. See *Harper's Magazine*, June, 1899 p., 44. See Surgical Anæsthesia, addresses and other papers, by Henry Jacob Bigelow, A.M., M.D., LL.D., Boston, Little, Brown & Co., 1900.

of Doctor of Medicine from the Washington University above alluded to.

In November, 1844, he entered the Harvard Medical School in Boston in regular course as a matriculate and attended lectures for two years, expecting soon to receive his full degree. While pursuing his studies and practicing dentistry at the same time as a means of earning the money necessary to continue them, his attention was drawn vividly to the pain attending certain severe dental operations. The suffering involved made a deep impression upon his mind and he set about to discover some means to alleviate it.

Experiments upon animals and upon himself.—He read in his text books extensively upon the subject, and finally began a series of experiments upon insects, fish, dogs, and lastly upon himself. Satisfied that his favorite spaniel, "Nig," had not been harmed by the inhalation of sulphuric ether vapor, even subsequent to a state of complete unconsciousness, he determined to inhale the ether himself. In his memoir to the Academy of Arts and Sciences, at Paris, presented by M. Arago, in the autumn of 1847, he thus describes the experiment, and his next almost immediate experiment upon a patient:[1]

Taking the tube and flask, I shut myself up in my room, seated myself in the operating chair, and commenced inhaling. I found the ether so strong that it partially suffocated me, but produced no decided effect. I then saturated my handkerchief and inhaled it from that. I looked at my watch and soon lost consciousness. As I recovered, I felt a numbness in my limbs, with a sensation like nightmare, and would have given the world for some one to come and arouse me. I thought for a moment I should die, in that state and the world would only pity or ridicule my folly. At length I felt a slight tingling of the blood in the end of my third finger, and made an effort to touch it with my thumb, but without success. At a second effort, I touched it, but there seemed to be no sensation. I gradually raised my arm and pinched my thigh but I could see that sensation was imperfect. I attempted to rise from my chair, but fell back. Gradually I regained power over my limbs and found that I had been insensible between seven and eight minutes.

Experiments upon others.—Delighted with the success of this experiment, I immediately announced the result to the persons employed in my establishment, and waited impatiently for some one upon whom I could make a fuller trial. Toward evening, a man residing in Boston came in, suffering great pain, and wishing to have a tooth extracted. He was afraid of the operation, and asked if he could be mesmerized

1. Littell's *Living Age*, March 18, 1848.

I told him I had something better, and saturating my handkerchief, gave it to him to inhale. He became unconscious almost immediately. It was dark, and Dr. Hayden held the lamp while I extracted a firmly-rooted bicuspid tooth. There was not much alteration in the pulse and no relaxing of the muscles. He recovered in a minute and knew nothing of what had been done for him. He remained for some time talking about the experiment. This was on the 30th of September, 1846.

The first public notice of this event appeared in the Boston *Daily Journal* of Oct. 1, 1846, in the following terms:

Last evening, as we were informed by a gentleman who witnessed the operation, an ulcerated tooth was extracted from the mouth of an individual without giving him the slightest pain. He was put into a kind of sleep, by inhaling a preparation, the effects of which lasted for about three-quarters of a minute, just long enough to extract the tooth.

This publication induced the eminent surgeon, Dr. Henry J. Bigelow, to visit Dr. Morton's office, and he was present at a large number of successful inhalations of ether vapor by the new method in which teeth were extracted without pain. So impressed was he with the magnitude of the event and the perfection of the method of anesthetic inhalation in Morton's hands, that he at once warmly espoused Morton's desire to make public demonstration of his method. Largely through his instrumentality, permission was secured from Dr. John C. Warren, senior surgeon of the Massachusetts General Hospital, to make trial of the new method, and on Oct. 16, 1846, at this Hospital, occurred the first public demonstration of surgical anesthesia, in the presence of the surgical and medical staffs in an amphitheatre crowded to overflowing with students and physicians.

First public demonstration of Surgical Anesthesia.—It was a trying moment to this medical student when he determined to exhibit his discovery of practical ether anesthesia before his classmates, professors, and the public. But so convinced was he by reason of his experience gained in private practice, of success, that he was willing to face this ordeal. Morton came in to the amphitheatre late, delayed by waiting for the completion of a new inhaler. Just a few minutes before, Dr. Warren had remarked, " As Dr. Morton has not arrived, I presume he is otherwise engaged," apparently conveying the idea that Dr. Morton was not likely to appear. As he was about to proceed with his operation Morton entered. Amidst that sea

of faces he saw not one which was sympathizing. Blank incredulity, or at the best curiosity alone, was to be seen. Warren turning to him remarked, "Well, sir, your patient is ready." Adjusting his apparatus Morton calmly administered the anesthetic and turning to Dr. Warren said, "Dr. Warren, *your* patient is ready." The silence of the tomb reigned in the large amphitheatre while Dr. Warren made his first incision through the skin and dissected out a large tumor, while the patient made no sign, nor moved a muscle of his body. When the operation was completed Dr. Warren turned to the audience and said slowly and emphatically, "Gentlemen, *this* is no humbug," and Bigelow remarked, "I have seen something to-day that will go around the world." Thus occurred the first public demonstration of surgical anesthesia. From this crucial demonstration in October, 1846, dates the immediate and universal adoption of the practice of anesthesia throughout the civilized world. The event marked the advent of a new epoch in history, namely, the epoch of practical painless surgery.

Formal announcement of the discovery to the medical world was made by Dr. Bigelow in a paper read before the Academy of Arts and Sciences on November 3, and before the Boston Society of Medical Improvement on November 9, and published in the Boston *Medical and Surgical Journal*, Nov. 18, 1846. This constituted the first publication in the medical press of "Surgical Anesthesia," namely, of the fact that operations, dental or surgical, could be performed painlessly, whether by nitrous oxide gas, ether or chloroform.

The discovery now announced brought with it overwhelming labors, and Dr. Morton, the second year medical student within a few months of taking his degree, was compelled to discontinue his studies.

Reception of the discovery by surgeons and the public.—The news of the discovery excited enthusiasm on every hand. Dr. Warren, usually grave and dispassionate, wrote:

> A new era has opened on the operating surgeon. Who could have imagined that drawing a knife over the delicate skin of the face might produce a sensation of unmixed delight? That the contorting of anchylosed joints should coexist with a celestial vision? If Ambrose Paré, and Louis, and Desault, and Chesselden, and Hunter, and Cooper, could see what our eyes daily witness, how would they long to come among us and perform their exploits once more. And with what fresh vigor

does the living surgeon, who is ready to resign the scalpel, grasp it, and wish again to go through his career under the new auspices.

And Dr. Oliver Wendell Holmes in his introductory lecture delivered before the medical class at the Harvard University, November 3, 1847, vividly said:

The knife is searching for disease—the pulleys are dragging back dislocated limbs—Nature herself is working out the primal curse which doomed the tenderest of her creatures to the sharpest of her trials, but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever.

Quickly the medical journals of the country were teeming with reports of surgical operations performed under the influence of the new agency and the newspapers spread the news far and wide. As soon as the steamer which left Boston after the 16th of October had reached Liverpool the news rapidly spread, and testimonials from Germany, Russia, India and lands even more remote, were quickly added, bearing witness of the efficacy and safety of the process and the pleasure with which it had been received. On Dec. 21, the eminent surgeon Liston amputated a thigh under ether anesthesia, and expressed his surprise and delight as follows:

Hurrah! Rejoice! Mesmerism and its professors have met with a heavy blow and great discouragement! An American dentist has used the inhalation of ether to destroy sensation in his operations, and the plan has succeeded in the hands of Warren, Hayward and others, in Boston. In six months no operation will be performed without this previous preparation. Rejoice!

Sir Benjamin Brodie, in a letter to Dr. Chalmers struck a note of warning:

" I have heard of this before," he writes. " The narcotic properties of inhaled ether have been long known and I have tried it on guinea-pigs, whom it first set asleep and then killed. One question is, whether it can be used with safety."

" The People's London Journal " of Jan. 9, 1847, wrote:

Good News from America! Hail, happy hour! We Have Conquered Pain. This is, indeed, a glorious victory to announce; a victory of pure intellect. And from America comes the happy news.

The London *Lancet*, well-known as the organ of the surgical and medical profession in Great Britain, said of the discovery:

The discovery of Dr. Morton—more striking to the general than to the scientific mind—will undoubtedly be placed high among the blessings

of human knowledge and discovery. That its discoverer should be an American is a high honor to our Transatlantic brethren; next to the discovery of Franklin, it is the second and greatest contribution of the New World to science, and deserves, if his discovery stands the test of time, the gratitude and reward of every civilized people and government upon the face of the world.

Needless to quote further from the overwhelming mass of literature of this time on the subject. The simple fact stands forth that pain in surgery had at last been conquered.

Origin of the term Anesthesia.—Although the child had been born into the world, it still remained to christen it, for no word in the language of the day expressed in specific terms either the act or the state produced by rendering patients insensible to the pain of surgery. Accordingly a meeting was held at the house of Dr. A. A. Gould, at which were present, Dr. Henry J. Bigelow, Dr. O. W. Holmes, and Dr. Morton. Dr. Gould read aloud a list of names which he had prepared. On hearing the word " Letheon " Dr. Morton exclaimed, " That is the name the discovery shall be christened," and others favored this name. But upon receiving the following letter from Dr. O. W. Holmes, Dr. Morton adopted the terms " Anesthesia " and " Etherization," now so familiar. Dr. Holmes' letter reads as follows :

BOSTON, November 21, 1846.

My Dear Sir: Everybody wants to have a hand in a great discovery. All I will do is to give you a hint or two, as to names, or the name, to be applied to the state produced and the agent.

The state should, I think, be called " anæsthesia." This signifies insensibility, more particularly (as used by Linnaeus and Cullen) to objects of touch. (See " Good-Nosology," p. 259.) The adjective will be " anæsthetic."

Thus we might say the state of anæsthesia, or the anæsthetic state * * * I would have a name pretty soon, and consult some accomplished scholar such as President Everett, or Dr. Bigelow, Sr., before fixing upon the terms, *which will be repeated by the tongues of every civilized race of mankind.* * * *

You could mention these words which I suggest for their consideration; but there may be others more appropriate and agreeable.

Yours respectfully,

O. W. HOLMES.

DR. MORTON.

In this connection, it may not prove uninteresting to read a letter written 46 years later by the same Dr. Holmes to Mr.

1 2 3 4 5 6 7 8

1. Dr. Henry J. Bigelow
2. Dr. A. A. Gould.
3. Dr. J. Mason Warren.
4. Dr. John Collins Warren.
5. Dr. Morton.
6. Dr. Samuel Parkman.
7. Dr. S. D. Townsend
8. Dr. Geo. Hayward.

DR. MORTON MAKING THE FIRST PUBLIC DEMONSTRATION OF ETHERIZATION AT THE MASSACHUSETTS GENERAL HOSPITAL. BOSTON. OCTOBER 16. 1846.

After a steel engraving published in "Trials of a Public Benefactor," by Nathan P. Rice, M.D. Pudney & Russell, Publishers, New York, 1859

Edward Snell, who wrote an article on Anesthesia in the *Century Magazine* of August, 1894:

Boston, April 2, 1893.

My Dear Sir: Few persons have or had better reason than myself to assert the claim of Dr. Morton to the introduction of artificial anesthesia into surgical practice. The discovery was formally introduced to the scientific world in a paper read before the American Academy of Arts and Sciences by Dr. Henry J. Bigelow, one of the first, if not the first, of American surgeons.

On the evening before the reading of the paper containing the announcement of the discovery, Dr. Bigelow called at my office to recite this paper to me. He prefaced it with a few words which could never be forgotten.

He told me that a great discovery had been made, and its genuineness demonstrated at the Massachusetts General Hospital, of which he was one of the surgeons. This was the operation of insensibility to pain during surgical operation, by the inhalation of a certain vapor (the same afterward shown to be that of sulphuric ether). In a very short time, he said, this discovery will be all over Europe. He had taken a great interest in the alleged discovery, had been present at the first capital operation performed under its influence, and was from the first the adviser and supporter of Dr. W. T. G. Morton, who had induced the surgeons of the hospital to make trial of the means by which he proposed to work this new miracle. The discovery went all over the world like a conflagration.

The only question was whether Morton got advice from Dr. Chas. T. Jackson, the chemist, which entitled that gentleman to share, greater or less, in the merit of the discovery.

Later it was questioned whether he did not owe his first hint to Dr. Horace Wells, of Hartford, which need not be disputed. Both these gentlemen deserve " honorable mention " in connection with the discovery, but I have never a moment hesitated in awarding the essential credit of the great achievement to Dr. Morton.

This priceless gift to humanity went forth from the operating theatre of the Massachusetts General Hospital, and the man to whom the world owes it is Dr. William Thomas Green Morton.

Experiments have been made with other substances besides sulphuric ether, for the production of anesthesia. Among them, by far the most important, is chloroform, the use of which was introduced by Sir James Y. Simpson. For this and for the employment of anesthetics in midwifery he should have all due credit, but his attempt to appropriate the glory of making the great and immortal discovery, as revealed in his contribution to the eighth edition of the " Encyclopedia Britannica," is unworthy of a man of his highly respectable position. In the ninth edition of the same work his article " Chloroform " is omitted, and a fair account of the discovery is given under the title " Anesthesia."

Yours very truly,

O. W. Holmes.

The Advent of Chloroform.—Surgical anesthesia had been already in general practice in America, in Great Britain, and on the continent for over a year, when in November, 1847, Dr., subsequently Sir, James Y. Simpson, announced that chloroform, another ether, would produce anesthetic results similar to sulphuric ether. In sending to Dr. Morton his first publication upon Chloroform Dr. Simpson writes:

My Dear Sir: I have much pleasure in offering for your kind acceptance the accompanying pamphlet. In the ***Monthly Journal of Medical Science*** I have a long article on Etherization, vindicating your claims over those of Jackson. Of course, the great thought is that of producing insensiblity, and for that the world is, I think, indebted to you.

With very great esteem for you, allow me to subscribe myself,

Yours very faithfully,

J. Y. Simpson.

Edinburgh, Nov. 19, 1847.

The substitution of chloroform for sulphuric ether in no wise altered the fact that the era of surgical anesthesia began with sulphuric ether in 1846. Simpson followed the path where Morton had pointed out the way. His use of chloroform greatly promoted the general use of anesthetics.

Testimonials in Honor of Dr. Morton.—The Trustees of the Massachusetts General Hospital, quickly following the public demonstration of October, 1846, made a report according the honor and credit of the discovery to Dr. Morton, and presented him with a silver box containing one thousand dollars "In honor of the ether discovery of Sept. 30, 1846." adding the further inscription, "He has become poor in a cause which has made the world his debtor."

Later on Dr. Morton received a divided Montyon prize from the French Academy of Sciences, the "Cross of the Order of Wasa, Sweden and Norway," and the "Cross of the Order of St. Vladimir, Russia."

In the public gardens of Boston, Mass., a monument was erected to "commemorate the discovery that the inhalation of ether causes insensibility to pain." The inscription continues, "First proved to the world at the Massachusetts General Hospital in Boston, October, 1846," Dr. Morton's deed, though not his name, is thus honored.

Yet another monument stands over Dr. Morton's grave in Mt. Auburn Cemetery near Boston, "erected by citizens of

Boston," bearing the following inscription written by the late Dr. Jacob Bigelow:

WILLIAM T. G. MORTON,
INVENTOR AND REVEALER OF ANESTHETIC INHALATION.
BEFORE WHOM, IN ALL TIME, SURGERY WAS AGONY.
BY WHOM PAIN IN SURGERY WAS AVERTED AND ANNULLED.
SINCE WHOM SCIENCE HAS CONTROL OF PAIN.

On the outside walls of the new Public Library in Boston are memorial tablets with about 500 names of writers, artists and scientists. Here Boston inscribed Dr. Morton's name.

A still more eloquent expression of the gratitude of Massachusetts is the inscription of Dr. Morton's name upon the base of the dome in the new chamber of the House of Representatives in the State House in Boston, among the selected 53 of Massachusetts' most famous citizens—"Names selected," as stated at the time of the event, "in such a way that they shall either mark an epoch, or designate a man who has turned the course of events." The following names will indicate the general trend of the selection: Morse, Morton, Bell, Emerson, Hawthorne, Holmes, Longfellow, Lowell, Edwards, Channing, Endicott, Winthrop, John Adams, J. Q. Adams, Webster, Sumner, Choate, Everett, Bowditch and others.

General Grant and Anesthesia.—An interesting incident is mentioned by John H. Brinton, Professor of Surgery in the Jefferson Medical College of Philadelphia, in his valedictory address of 1892:

In the early summer of 1864, during the fierce contest in the Virginia wilderness, I was present officially at the headquarters of Lieutenant General Grant, on whose staff I had previously served. When in conversation with him an aide approached, and said to him that a stranger, a civilian doctor, wished to see him for the purpose of obtaining an ambulance for his personal use, in visiting the field hospitals. The answer of the General was prompt and decided. "The ambulances are intended only for the sick and wounded, and under no circumstances can be taken for private use." This response was carried as given to the waiting applicant, a travel-stained man in brownish clothes, whom at the distance I thought I recognized. I went to him, and found that he was Dr. W. T. G. Morton. I asked him to wait a minute, and returned to the General. On repeating his request, I received the same answer. "But, General," I ventured to say, "if you knew who that man is, I think you would give him what he asks for." "No, I will not," he replied. "I will not divert an ambulance to-day, for anyone; they are all required elsewhere." "General," I replied, "I am sure

you will give him the wagon, he has done so much for mankind, so much for the soldier; more than any soldier or civilian has ever done before, and you will say so when you know his name." The General took his cigar from his mouth, looked curiously at the applicant, and asked, " Who is he? " " He is Dr. Morton, the discoverer of ether," I answered. The General paused a moment, then said, " You are right, doctor, he has done more for the soldier than any one else, soldier or civilian, for he has taught you all to banish pain. Let him have the ambulance and anything else he wants." Not only this, but I have learned from a printed letter of Dr. Morton, recently sent me by his family, that the hospitalities of the headquarters, ambulance, tent, mess and servant were afterwards tendered him during his stay, by order of the General commanding. Dr. Morton at this time was present as a volunteer surgeon, on the requisition of the surgeon general, to aid in the administration of anesthetics to the wounded.

Action of the Government.—Dr. Morton's claim for remuneration as the true discoverer of surgical anesthesia has been conceded in the reports of no less than six committees[1] of Congress, while no report has ever accorded this merit to his opponents. These reports are elaborate and carefully considered documents, founded upon a great mass of testimony, taken as well by Dr. Morton to support his claim as by the several contestants to destroy it. These committees reported bills, which were buried and lost in the mass of unfinished business.

The last of these favorable reports was made in 1863, by Senator, afterwards Vice-President, Henry Wilson, then chairman of the Senate Committee on Military Affairs and the Militia. After an exhaustive examination of the claims of all the contestants, he, as chairman, reports, " We are satisfied that Dr. Morton is the discoverer. We think him entitled to liberal compensation and reward." Senator Wilson continues (see Report), " Worn out and hopeless of the action of Congress, Dr. Morton memorialized the President of the United States. The President received the application, and was about to order a just and liberal compensation, when the Secretary of War, Jefferson Davis, induced him to require, as a prerequisite, a suit in one of the Federal courts, and a judgment then

1. Report of Select Committee, H. R., 28th Congress, 2d session.
Report of Naval Committee, H. R., 32d Congress, 2d session.
Report of Military Committee, Senate, 32d Congress, 2d session.
Report of Naval Committee, Senate, 32d Congress, 2d session.
Report of Select Committee, H. R., 32d Congress, 1st session.
See especially report of Military Committee, Senate, 37th Congress, 3d session.

against an army or navy surgeon for using it. This was done, and in due time, but after a change of administration, the record of judgment was presented to Howell Cobb, then head of the Treasury Department, who hesitated for a time, and at last refused, to carry out the order of the President. This memorial to the President was backed by the signatures of a majority of the members of each house of Congress." The suit was simply a friendly and technical action, taken at the request of the President. Dr. Morton made no further efforts to follow up his claim against the government, subsequent to Senator Wilson's report of 1863 and the failure to pass the bill in Congress.

A host of distinguished citizens, after careful examination of the facts, accorded their support to Dr. Morton in these various applications to Congress and on other occasions. We will here merely mention the names of Daniel Webster, Rufus Choate, Horace Mann, Charles Sumner, Marcus Morton, Louis Agassiz, R. H. Dana, Edward Everett, J. M. Carlisle, Sam Houston, Samuel F. B. Morse, James Russell Lowell, Henry W. Longfellow, Alexander Stephens, Oliver Wendell Holmes, and among physicians practically all of the greatest in the country, including instances such as the Bigelows and the Warrens in Boston, and also James Jackson, John Ware, Henry I. Bowditch, George C. Shattuck, Charles G. Putnam, Francis Minot, J. J. White; in New York, Willard Parker, Valentine Mott, John W. Francis, John Watson, James R. Wood, Gurdon Buck, J. M. Carnochan, W. H. Van Buren, T. Gaillard Thomas, G. L. Elliott, Thos. M. Markoe, Fordyce Barker, John T. Metcalfe, Stephen Smith, Lewis A. Sayre, Edward Delafield, E. R. Peaselee, Horace Green, etc.

The Semi-Centennial of Anesthesia, Oct. 16, 1896.—The discovery of surgical anesthesia has been celebrated on many occasions but upon none more notably than upon that of the "Commemoration of the Fiftieth Anniversary of the first public demonstration of Surgical Anesthesia at the Massachusetts General Hospital Boston, Oct. 16, 1846."

On this occasion the Committee of Arrangements consisted of:

J. Collins Warren, M.D., LL.D., Chairman; James C. White, M.D., William L. Richardson, M.D., Henry H. A. Beach, M.D., Frederick C. Shattuck, M.D., William Sturgis Bigelow, M.D.

And the "honorary committee" included the names of:

John Shaw Billings, M.D., LL.D., New York, Chairman; Charles W. Eliot, LL.D., President of Harvard University; Henry P. Walcott, M.D., President Mass. Medical Society; Morrill Wyman, M.D., LL.D. Cambridge Cladius Henry Mastin, M.D., LL.D., Mobile; Robert F. Weir, M.D., New York; Hunter McQuire, M.D., LL.D., Richmond; Phineas Sanborn Conner, M.D., LL.D., Cincinnati; William Williams Keen, A.M., M.D., LL.D., Philadelphia; Horatio C. Wood, M.D., LL.D., Philadelphia; William Pepper, M.D., LL.D., Philadelphia; Henry H. Mudd, M.D., St. Louis; Louis McLane Tiffany, A.M., M.D., Baltimore; Nicholas Senn, M.D., Ph.D., LL.D., Chicago; Charles McBurney, M.D., New York; Nathaniel Pendleton Dandridge, M.D., Cincinnati; Francis John Shepherd, M.D., Montreal; J. William White, M.D., Ph.D., Philadelphia; William Osler, M.D., Baltimore; William J. Morton, M.D., New York; Frederic Shepard Dennis, M.D., New York; William S. Halsted, M.D., Baltimore; Roswell Park, A.M., M.D., Buffalo; Levi C. Lane, M.D., LLD., San Francisco.

Addresses and papers were read by:

Chas. H. Dalton, Esq., President of the Massachusetts General Hospital; Robert T. Davis, M.D., of Fall River; John Ashhurst, Jr., M.D., LL.D., of Philadelphia; David W. Cheever, M.D., LL.D., of Boston; John P. Reynolds, M.D., of Boston; W. H. Welch, M.D., LL.D., of Baltimore; Chas. McBurney, M.D., of New York; S. Weir Mitchell, M.D., LL.D., of Philadelphia.

II.

"Anesthesia" Prior to Morton's Demonstration of 1846.

From the beginning of historical time up to the advent of practical ether anesthesia in 1846, it had been a dream and a hope of surgeons to find some way of performing operations without pain to the patient. Attempts to accomplish this object had been frequently made from century to century both with potions and with the inhalation of gases.

In the first and second centuries, Pliny, Dioscorides and Apuleius extol the efficacy of Mandragora. The latter writes, "If anyone is to have a member mutilated, burned or sawed, let him drink half an ounce with wine, and let him sleep until the member is cut away, without pain or sensation." Similar references are numerous but they have mainly an antiquarian interest. But during the period of the half century prior to 1846, efforts at intentional anesthesia took more and more a definite shape, leading step by step to the final culmination of a success, patent to all the world.

Nysten, in his "Dictionary of Medical Sciences," speaks of the inhalation of sulphuric ether as familiarly employed to

mitigate the pains of colic and figures an apparatus for its administration. In 1795 Dr. Richard Pearson published a pamphlet upon this subject, and in a work of Dr. Beddoes, published in 1796, a case is noted of deep sleep produced by the inhalation of ether. Among American authors the stupefying effects of the inhalation of ether were noted by Godman (1822), Mitchell (1832), Professor Samuel Jackson (1833), Wood and Bache (1834), etc. In "Pereira's Elements of Materia Medica," Morton's text-book at the Harvard Medical School stood recorded, "If the air be too strongly impregnated with ether, stupefaction ensues."

Most remarkable is the statement of Sir Humphrey Davy in his Researches on Nitrous Oxide made in 1800. After referring to the exhilarating properties of nitrous oxide gas which caused it to be popularly termed "laughing gas" and after recording observation concerning people *whom he had seen made temporarily insensible by inhaling it*, he writes, p. 32, "*As nitrous oxide in its extensive operations appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place.*"

Observations such as those thus far quoted went on apace and it was not long before "laughing gas frolics" and "ether frolics" became fairly well established. For Faraday already in 1818 had written, "When the vapor of ether mixed with common air is inhaled, it produced effects similar to those occasioned by nitrous oxide."

Among actual operators who produced anesthesia for surgical operations was Dauriol, who specifies five cases of painless operations under the effects of anodyne vapors, and more remarkable, Hickman, a surgeon of London, who in 1828, in a letter to the French Academy of Medicine, published his results and described a method of "*suspending sensibility by the methodical introduction of certain gases into the lungs*," during which "*the most delicate and most dangerous operations are performed without producing pain in the individuals submitted to them.*" Here we have a precise statement of modern anesthesia as practiced daily. But what the gases were we do not know. Take Davy's statement and this statement together and it is evident that it was necessary for Morton to take but a very small step for-

ward to succeed and equally evident that nothing done by Jackson, Wells or Long, as subsequently claimed by them, necessarily furnished for Morton the stepping stone.

In 1839, on the occasion of an ether frolic given in Athens, Ga., a young man by the name of Wilhite, who happened to be present, compelled a negro boy to inhale ether and forced it upon him until complete insensibility took place. Later on, in 1842, Wilhite became a student of Dr. Crawford W. Long, also of Georgia, and told him of his experience. Dr. Long, familiar with these ether frolics, allowed a patient, Venable, to inhale the ether and removed a small encysted tumor about one-half an inch in diameter from his scalp. He tried the same experiment in a few more minor operations (three times in 1842, once in 1843, and once in 1845).

In these operations Long did not administer the ether, but the patient administered it to himself. The effect of the ether was not carried beyond the exhilarating stage, and he abandoned its use. He made no publication of these experiments or of their results until December, 1849. Under this date, writing to the *Southern Medical and Surgical Journal*, he says:

> The result of my second experiment in etherization was such as led me to believe that the anesthetic state was of such short duration that ether would only be applicable in cases in which its effects could be kept up by constant inhalation during the time of the performance of the operation. Under this impression, up to January, 1847, I had not used ether in but one case in extracting teeth, and thus deprived myself of experimenting in the only class of cases which are of frequent occurrence in a country practice. Elsewhere in his article Dr. Long remarks, "Others more favorably situated engaged in similar experiments and consequently the publication of etherization did not bide my time."

Long did not carry his experiments far enough to reach a decided result.

Much similar to Dr. Long's experience was that of Horace Wells of Hartford, Conn. Two years after Long, in December, 1844, Colton was giving "laughing gas frolics" in popular exhibitions in Hartford, Conn. One of the audience, Col. Samuel A. Cooley, took the gas. Upon recovering from its effects and finding his legs had been injured without his being conscious of it, he made the observation that "he believed a person could undergo a severe surgical operation without feeling any pain at the time." This deduction Wells (who was also present as

a spectator) accepted from Cooley, and Cooley and Wells, together with Colton and Riggs, proceeded to make application of it, by operating upon Wells. Wells was the patient, Colton administered the gas, and Riggs pulled a defective wisdom tooth. Wells experienced no pain and was profoundly impressed with the success of the operation. We quote the only essential part of his first published statement, made to the Hartford *Courant*, Dec. 7, 1846, about two months after the Boston announcement by Morton:

I accordingly resolved to try the experiment of inhaling an exhilarating gas myself, for the purpose of having a tooth extracted. I then obtained some nitrous oxide gas, and requested Dr. J. M. Riggs to perform the operation, *at the moment when I should give the signal*, resolving to have the tooth extracted before losing all consciousness. This experiment proved to be perfectly successful; it was attended with no pain whatever. I then performed the same operation on 12 or 15 others with the same results.

No one to-day would regard this degree of consciousness as compatible with true anesthesia.

Cooley subsequently manufactured the gas, and he and Wells entered into a partnership to administer gas and pull teeth.

" Our plan was," says Cooley, testifying in 1852,[1] when the subject came up before Congress, " to keep the whole matter a secret and under our sole control, which would insure us a large and lucrative business."

But Wells now abandoned the matter. Cooley, in his testimony, continues:

" He (Wells) said he was disappointed in the effects of the gas and that it would not operate as he hoped and thought it would, as there was no certainty to be placed upon it, and consequently he should abandon it, as he had so much other business to attend to, and as the gas would not operate in all cases alike, and, therefore, could not be trusted."

This abandonment and failure is proven by many witnesses. Probably the most interesting of these is Wells himself, who as above quoted, has merely claimed that in a period of time comprising two years (Dec. 1844 to Dec. 1846) he had " performed the same operation on 12 or 15 others," although he was in the active practice of dentistry.

After a fourth experience in extracting teeth in Hartford, in January, 1845, Wells visited Boston and secured permission

1. Statements supported by evidence, submitted to the Senate Committee, 32d Congress, 2d session, Jan. 21, 1853. Appendix, p. 7.

from Dr. John C. Warren to try the gas before the class. The operation was the extraction of a tooth. The experiment failed, the patient screamed with pain, and Wells returned home. Referring to this experience at Boston, Dr. P. W. Ellsworth of Hartford wrote, "The first experiment failing, he ceased making any further personal efforts." And again, G. Howell Olmstead, Jr., of Hartford, says in his sworn testimony:

> Having been associated in business with Dr. Wells and being very intimate, we had a great many conversations about the gas * * * and I considered he had abandoned the thing entirely, as he expressed himself to me that the operation in some cases proved a perfect failure.

George Brinley, of Hartford, testified that Wells said to him that "he was stupid that he had not pursued the discovery."[1]

Thus Wells also, like Long, did not carry his experiments far enough to reach a decided result.

There remain no further anesthetic events prior to 1846 to record.

> "But yet—and yet," to quote the eloquent words of the distinguished surgeon, John Ashhurst, Jr., of Philadelphia, "surgeons went on in every country, cutting and burning, and patients went on writhing and screaming, until on the 16th day of October, in the year 1846, in the Massachusetts General Hospital, Dr. John C. Warren painlessly removed a tumor from a man who had previously been etherized by Dr. William T. G. Morton, and surgical anesthesia became the priceless heritage of the civilized world."

III.

> "*The invention all admired, and each how he*
> *To be the inventor missed, so easy it seemed,*
> *Once found, which yet unfound most would have thought*
> *Impossible.*" —Milton.

Thus far, Morton stands alone, as the *innovator and inventor of practical ether anesthesia.* Expressed in these terms no one disputes the fact. Up to the moment of the public demonstration of Oct. 16, 1846, the world was barren of relief from the pain of surgery. No such practice existed.

And barren as was the world of relief from pain, it was equally barren of any published statement that such relief could actually be obtained. Of those who were soon to appear upon the scene as claimants, not one could produce a written or printed word—

1. All of the testimony above produced is taken from "Statements Supported by Evidence," 32d Congress, 2d session, Jan. 21, 1853.

nor could point to a publication in medical journal or public press, to show that he had tried to do a similar thing.

> " *To know a thing and not to express it,*
> *Is all one as if he knew it not.*"
>
> —Burton's Anatomy of Melancholy.

Decisive as would seem to be the events thus far narrated, they did not free the invention nor the inventor from what the London *Lancet* at the time humorously referred to as " the large class of jump-up-behinders."

The first after-claimant was Dr. C. T. Jackson of Boston. He claimed to have said, " Try ether." The knowledge conveyed in this suggestion was, as we have seen, common to text-books. Morton proved that he had been " trying ether " many months before the date set for this conversation. Next, Jackson claimed that Morton had worked under his directions. If so, no one of the participators in the early decisive test operations, public or private, knew of it, nor had anyone seen him or heard that he was interested in the matter. He had never even witnessed an operation, and did not visit the Massachusetts General Hospital until more than two months subsequent to the date of the public demonstration by Morton. In this interval of time he frequently denounced the discovery roundly as a dangerous practice. About this time, the late Professor Louis Agassiz said on one occasion to Dr. Jackson, " If Dr. Morton had killed his first patient, would you (Jackson) have accepted the blame just as now you ask for the honor? " Dr. Jackson remained silent.

The enrollment of Morton's name in the Massachusetts " Hall of Fame," in the rotunda of the State House, has expressed Massachusetts' final verdict.

Chronologically, the next after claimant, subsequent in time about two months after the Boston announcement of 1846, was Horace Wells, whose " 12 to 15 " experiments and final abandonment have been alluded to. The inhalation of nitrous oxide, in his hands and time, was not pushed to the point of the present familiar anesthetic stupor, but only to the point of a partial intoxication where a partial numbness was obtained.

Wells, in 1847, stimulated by the success of ether anesthesia, went to New York to try to demonstrate nitrous oxide anesthesia. Here also again, as in Boston, the effort failed.

The following letter of Dr. Wm. H. Van Buren, one of New York's distinguished surgeons, is interesting in this connection·

New York, Oct. 1, 1858.

I recollect distinctly having been present in the operating theatre of the New York Hospital, in 1847, to witness an operation by the late Dr John Kearny Rodgers. Dr. Horace Wells was present, and administered nitrous oxide gas to the patient, with the object of producing insensibility to the pain of the operation, but the attempt was unsuccessful, as the patient seemed to suffer about as much pain as might have been anticipated under ordinary circumstances. A large number of surgeons and physicians were present among whom was Dr. Valentine Mott, and other prominent members of the profession.

As the supply of the supposed anesthetic agent was apparently ample, judging from the large size of the bags containing it, and its administration conducted fairly and fully, the general impression upon the spectators seemed to me, to be decidedly unfavorable as to its power of producing insensibility to pain.

Wm. H. Van Buren, M.D.

Not until nearly 17 years later on, in 1862,[1] did laughing gas become an acknowledged anesthetic, when Drs. Dunham, of New Britain, and Smith, of New Haven, Conn., took the matter up with Colton. It then became clear why Wells and others had failed; operators had been using, as did Wells, the small gas bag, and the exhilarating dose of Sir Humphrey Davy; the amount of gas had been too small; they had feared to produce complete stupor, and had believed that pain was annulled during the excitement stage which they dared not exceed.

It was a narrow margin from a possible discovery, but many a discovery has been lost by a narrower one.

It was only in 1864[2] that Colton established the Colton Dental Association in New York, and in 1868 that the Dental Hospital of London adopted the use of nitrous oxide. This use is still confined to brief operations like the extraction of teeth.

As we have seen, the idea of using laughing gas was not new with Wells; this idea originated with Davy. Nor was the idea new of performing a surgical operation under the influence of inhaled gases. This too had been suggested by Davy and practiced by Hickman in 1828, by Dr. Crawford W. Long of Georgia in 1842, and by others:

To Wells belongs the credit of a conviction, which many had

1. See Trans. Am. Surgical Association, 1897, Surgical Anesthesia, by John Collins Warren, M.D.

2. *Ibid.*

shared with him, that surgical anesthesia was possible, but it was his misfortune not to be able to succeed and convince others of his success. His method was faulty.

Third in line of after-claimants was Dr. Long of Georgia. Three years after 1846, he made a modest statement of his experiences already referred to and worthy of all praise. But in 1877 Dr. J. Marion Sims brought Dr. Long prominently forward as the true "discoverer of anesthesia." Dr. Long himself made no such claim. As in the case of Wells his own words speak for themselves.

He wrote, as already quoted, "the publication of anesthesia did not bide my time."

Erase from the history of anesthesia, Jackson's suggestion (common to text-books) and Long's and Wells' attempt, (both of them failures, unpublished and unacted upon by the profession of medicine), and we should not take a step backward in anesthesia. It does not appear that Morton could have learned from Wells or Long anything but the lesson of failure.

IV.

Dr. Morton's Personality.—Announcing his discovery at the age of 27 and dying at the comparatively early age of 48, Dr. Morton's 21 years of adult and active life were entirely consumed with the turmoil and pain of controversy. The eminent surgeon, Dr. Henry J. Bigelow, writes of him:[1]

> Morton had a combination of qualities such as few other men in the community possessed. Fertile in expedients and singularly prompt in execution, he was earnest and persevering beyond conception. His determined persistence is remembered at this even interval of time, as having been a terror to his best friends. Nobody denies that Morton, recklessly and alone, faced the then supposed danger attending ether stupor. If all accredited scientific opinion had not been at fault, and in the case of any fatal result, he would have infallibly been convicted of manslaughter, with little probability that anybody would have come forward to say, "The responsibility is not his, but mine."

Again that distinguished citizen and philanthropist of Boston, Mr. John J. May, in a letter written in 1895 to Dr. Hayden, alludes to another phase of Dr. Morton's character:

1. Extract from "A History of the Discovery of Modern Anæsthesia," by Henry J. Bigelow, "Century of American Medicine, 1776-1876," Philadelphia, 1876

Boston, April 18, 1895.

Dr. W. R. Hayden,—

My dear sir: I wish that you had known William Thomas Green Morton. I knew him well. I met him not infrequently in those years when the subject of anesthesia engrossed his time and thoughts.

I like to bear him in mind as he was—a refined courteous gentleman. Always neat in personal appearance, affable in manner, thoughtful of others' feelings and convenience, generous and warmly appreciative of any kindness and sign of good will offered to him.

Though enterprising and ardent—even sanguine—in business pursuits (in which he was remarkably methodical), and although often grieved and indignant at the gratuitous injuries and misrepresentations heaped upon him by unprincipled opponents, I do not remember that I ever heard from his lips an opprobrious epithet, or saw indications of an effort to retaliate upon his enemies.

Respectfully yours,

John J. May.

In personal appearance Dr. Morton was tall, handsome and of engaging manners. Friends and ardent supporters fell to his lot as to few, in the trying circumstances of a long sustained controversy. His character, as indicated by the above quotations, was a singular combination of Christian fortitude and charity to all, and of intense perseverance and activity. His devoted wife was cast in the same mold of forbearance and forgiveness. But the spell of anesthesia had been cast upon those two lives as upon the *morituri* of old—they did their duty to the end. No one unfamiliar with the story of the attempts to rob him of his just merits through 21 years of bitter attack, including 10 years of vain struggle with the government for even a most modest recompense, can realize at this day the weight of the powers of adversity which beset his course. Congress ignored his request for remuneration in spite of six majority reports of committees in his favor. The government, finally, as a last retreat, taunted him into bringing a technical suit for infringement of a patent (which almost at the moment of its issuance he had freely thrown open to the world) against some one medical officer of the government to establish a legal status, and thereupon it was falsely represented that he had endeavored by suit to prevent the government from using anesthetics in the army and navy. Having spent a very considerable fortune to introduce his discovery and defend himself from attack, he was reduced to poverty. It was not many years until life itself

was quietly crushed out beneath the load. The discovery of surgical anesthesia, while a boon to the world, was a tragedy to its author, and to his family. Science, civilization, had given with too free a hand and required a compensating sacrifice, whose lot was his. Though his misfortunes have been the foundation of countless fortunes to others, his sorrows the source of inexpressible happiness to millions; though his life was the one single life unblessed by what was to others blessing, he never complained, but pursued his way, simply, patiently and honestly, humbly thankful to have been a benefactor to his race. Dr. S. Weir Mitchell, in a poem, "The Birth and Death of Pain," read Oct. 16, 1896, on the occasion of the semi-centennial of Anesthesia, already alluded to, writes,

How did we thank him? Ah! no joy-bells rang,
No pæans greeted and no poet sang,
No cannon thundered from the guarded strand
This mighty victory to a grateful land!
We took the gift, so humbly, simply given,
And coldly selfish—left our debt to Heaven.
How shall we thank him? Hush! a gladder hour
Has struck for him; a wiser, juster power
Shall know full well how fitly to reward
The generous soul, that found the world so hard.

WILLIAM JAMES MORTON, M. D..
19 East 28th Street, New York.

COLUMBIA UNIVERSITY LIBRARIES

This book is due on the date indicated below, or at the expiration of a definite period after the date of borrowing, as provided by the library rules or by special arrangement with the Librarian in charge.

DATE BORROWED	DATE DUE	DATE BORROWED	DATE DUE

Gaylord
PAMPHLET BINDER
Syracuse, N. Y.
Stockton, Calif.

COLUMBIA UNIVERSITY LIBRARIES
1010227555

Historical Collection
RD80.M8
M84
1905
c.2

Morton

Memoranda relating to the discovery of surgical anesthesia.

FEB 4 1958 C. U. BINDERY

RD 80. M8
M84
1905
C. 2

BOUND